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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,304	12/11/2001	Yao Wang	EMC-01-201	7237

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EXAMINER

ENGLAND, DAVID E

ART UNIT	PAPER NUMBER
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2143

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/017,304	Applicant(s) WANG ET AL.	
	Examiner DAVID E. ENGLAND	Art Unit 2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28 are presented for examination.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. **Claims 1 – 5, 7, 8, 16, 18, 20 – 22, 24 – 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colby et al. (6449647) (hereinafter Colby) in further view of Chiou et al. (6792507) (hereinafter Chiou) in further view of Martini (5737577).**

4. Referencing claim 1, as closely interpreted by the Examiner, Colby teaches a method, operable on a computer system, for managing network resources for transfer of data stored on a first data storage system to a second data storage system in a data replication process, the method comprising the computer-executed steps of:

5. requesting from a server for services on a network, an allocation of bandwidth for data copying from the first data storage system to the second data storage system over the network based on an estimate of the data to be copied and a known time period in which to copy said data, (e.g. col. 2, line 65 – col. 3, line 9, col. 9, lines 5 – 40 & col. 11, lines 28 – 67),

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6. wherein the bandwidth allocation is determined based on an estimate of data to be copied and a known time period, (e.g., col. 9, lines 5 – 40 & Table 1);
7. transferring data in response to the bandwidth allocation from the server based on the request, (e.g. col. 9, lines 5 – 24);
8. monitoring network traffic performance characteristics during the data transfer, (e.g. col. 9, lines 5 – 24); and
9. responsive to the monitored network traffic characteristics, selectively requesting an effect on the bandwidth allocation, (e.g. col. 9, lines 5 – 24),
10. but does not specifically teach managing network resources for copying data stored on a first data storage system to a second data storage system, wherein each data storage system includes an array of data storage devices on which data involved in the copying is stored; and
11. copying data;
12. said bandwidth allocation also based on a number of invalid tracks between said first and second data storage systems.
13. Chiou teaches managing network resources for copying data stored on a first data storage system to a second data storage system, wherein each data storage system includes an array of data storage devices on which data involved in the copying is stored, (e.g., col. 7, lines 20 – 47 & col. 10, lines 37 – 63, “*update*”); and
14. copying data, (e.g., col. 10, lines 37 – 63, “*update*”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because when the requesting hosts and the target devices are geographically separated as in the Internet environment, their distributed cache scheme implementation may not always produce

the desired performance gains due to the data transmission latency across wide area networks, therefore copying data to devices that are geographically closer to requesting hosts lessens the latency of data transferred and bandwidth consumption.

15. Martini teaches said bandwidth allocation also based on a number of invalid tracks between said first and second data storage systems, (e.g., col. 3, line 57 – col. 4, line 9). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Martini with the combine inventions of Colby and Chiou because utilizing the total amount of usable tracks ensures what the system will actually use because if the system attempts to transfer data onto invalid tracks, errors could occur and the data that was meant for that section of disk will be lost.

16. Referencing claim 2, as closely interpreted by the Examiner, Colby teaches the effect requested is to increase bandwidth allocation, (e.g. col. 9, line 36 – col. 10, line 8).

17. Referencing claim 3, as closely interpreted by the Examiner, Colby teaches the request is in accordance with a Java-based protocol, (e.g. col. 5, lines 28 – 48).

18. Referencing claim 4, as closely interpreted by the Examiner, Colby teaches the effect requested is to increase the bandwidth allocation based on not meeting at least one performance criterion, (e.g. col. 9, line 36 – col. 10, line 8), but does not specifically teach copying data. Chiou teaches copying data, (e.g., col. 10, lines 37 – 63, “*update*”). It would have been obvious

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to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because of similar reasons stated above.

19. Referencing claim 5, as closely interpreted by the Examiner, Colby teaches the at least one performance criterion is a predetermined data transfer rate, (e.g. col. 9, line 36 – col. 10, line 8).

20. Referencing claim 7, as closely interpreted by the Examiner, Colby teaches the monitored internet network traffic characteristics includes information regarding packet latency, (e.g. col. 9, lines 5 – 35), but does not specifically teach copying data. Chiou teaches copying data, (e.g., col. 10, lines 37 – 63, “*update*”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because of similar reasons stated above.

21. Referencing claim 8, as closely interpreted by the Examiner, Colby teaches the monitored internet network traffic characteristics includes information regarding packet loss, (e.g. col. 9, lines 5 – 24 & TABLE 1), but does not specifically teach copying data. Chiou teaches copying data, (e.g., col. 10, lines 37 – 63, “*update*”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Chiou with Colby because of similar reasons stated above.

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22. Referencing claim 16, as closely interpreted by the Examiner, Colby teaches the data replication is carried out in accordance with a replication policy, (e.g. col. 5, lines 29 – 48).

23. Claims 18, 20 – 22, 24 – 26 and 28 are rejected for similar reasons stated above.

24. Claims 17 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Colby, Chiou and Martini as applied to claims 1, 9, 16, 18, 19 and 26 above, and in view of Lyon et al. (6028841) (hereinafter Lyon).

25. As per claim 17, as closely interpreted by the Examiner, Colby, Chiou and Martini do not specifically teach the replication policy defines replication groups including devices distributed between the first and second data storage systems and the data replication process is completed when all devices in the replication groups are synchronized. Lyon teaches the replication policy defines replication groups including devices distributed between the first and second data storage systems and the data replication process is completed when all devices in the replication groups are synchronized, (e.g. col. 6, lines 7 – 15). It would have been obvious to one of ordinary skill in the art at the time the invention was conceived to combine Lyon with the combine system of Colby, Chiou and Martini because synchronizing all devices would guarantee that all control functions see identical stimuli.

26. Claim 27 is rejected for similar reasons as stated above.

Response to Arguments

27. Applicant's arguments with respect to claims 1 – 5, 7, 8, 16 – 18, 20 – 22 and 24 – 28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID E. ENGLAND whose telephone number is (571)272-3912. The examiner can normally be reached on Mon-Thur, 7:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J. Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

David E. England
Primary Examiner
Art Unit 2143

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